

**UNITED STATES DEPARTMENT OF TRANSPORTATION**

**FEDERAL RAILROAD ADMINISTRATION**

**RAILWORTHINESS DIRECTIVE (RWD)**

**RWD No. 2023-01**

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This document is a Federal Railroad Administration (FRA) Railworthiness Directive (Directive or RWD) issued under 49 CFR 180.509(b)(4). FRA is issuing this directive to Sumitomo Mitsui Banking Corporation Rail Services, LLC (SMBC) based on its finding that as a result of non-conforming qualification practices, DOT-111 tank cars owned by SMBC, equipped with SMBC-owned rubber linings, may be in an unsafe operating condition that could result in the release of hazardous materials. FRA is issuing this Directive to ensure public safety, ensure compliance with the applicable Federal regulations governing the safe movement of hazardous materials by rail, and restore the railworthiness of all SMBC tank cars equipped with SMBC-owned rubber linings. SMBC has advised FRA that of its 1112 tank cars equipped with rubber linings, 315 of those linings are owned by the lessees of those tank cars (not SMBC). FRA will address the condition and disposition of those rubber linings in a separate action.

Further, FRA finds that SMBC's non-conforming qualification practices are in violation of the Federal Hazardous Materials Regulations (HMR), specifically 49 CFR sections 180.501(b), 509(a), 509(i)(1), 509(i)(2), 509(i)(3), 509(1), 511(e), and 517(b).

**I. BACKGROUND**

*Recent Incidents*

In the last 15 months, SMBC has had three separate incidents where SMBC-owned rubber linings failed on SMBC-owned DOT-111 tank cars, resulting in three separate in-transportation releases of phosphoric acid, UN 1805.

On April 29, 2022, SMBC-owned tank car SHPX-205689 experienced a non-accident release of the hazardous material while in transportation. The Department of Transportation Hazardous Materials Incident Report (Form 5800.1) indicated that 50 gallons released and that the release resulted from a rubber lining failure.<sup>1</sup> In response, on June 10, 2022, FRA initiated a Hazardous Materials Incident Investigation (HMII), 2022060125NAR-SHPX205689. In an August 9, 2022, email, as part of that HMII, FRA requested that SMBC determine the root cause of the failure and implement corrective and preventive actions by November 9, 2022.

On October 11, 2022, SMBC-owned tank car SHPX-205670, containing phosphoric acid, UN 1805, experienced a non-accident release of the hazardous material while in transportation. The National Response Center (NRC) was notified of the release and FRA initiated a HMII, 2022100251NAR-SHPX205670, on October 14, 2022. In an October 25, 2022, email, FRA requested that SMBC determine the root cause of the failure and implement corrective and preventive actions by January 25, 2023.

On November 1, 2022, SMBC-owned tank car SHPX-205565, containing phosphoric acid, UN 1805, experienced a non-accident release of the hazardous material

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<sup>1</sup> FRA notes that documents demonstrate that the shipper loaded the car with 9,304 gallons of phosphoric acid and emergency responders offloaded 3,300 gallons in the course of responding to the non-accident release. Accordingly, if the estimate of 50 gallons on the Form 5800.1 report is accurate, it is unclear what happened to approximately 6000 gallons of phosphoric acid that was loaded into the car.

while in transportation. SMBC notified FRA of the leaking tank car and FRA initiated a HMII, 2022120283OTHER-SHPX205565, on December 15, 2022. In a December 27, 2022, email, FRA requested that SMBC determine the root cause of the failure and implement corrective and preventive actions by March 27, 2023.

As of the date of this Directive, SMBC has not provided FRA with any information about the root cause(s) of the three rubber lining failures and has not moved these three cars to a certified tank car facility to determine the cause of the failures. Additionally, SMBC has not taken any action as required under 49 CFR 180.509 to reduce the qualification intervals of the tank cars involved in these non-accident releases. Accordingly, SMBC has not provided corrective or preventive actions to FRA. SMBC continues to operate its fleet of rubber lined tank cars without addressing FRA's concerns and in non-compliance with the HMR.

#### *Discussions with FRA*

On October 12, 2022, FRA requested a meeting with SMBC to discuss their inadequate response to FRA's investigations and to determine how FRA might better work with SMBC to complete these investigations in a timelier manner. On November 15, 2022, FRA teleconferenced with SMBC and discussed their package failures and the process they use to determine their qualification interval for rubber linings. During the teleconference, FRA requested that SMBC provide to FRA a list (SMBC Tank Car List and Lining Installation and Inspection Procedures) by December 1, 2022, of all SMBC's rubber lined tank cars that includes each tank car's car mark, number, commodity, lining type/grade, lining installation date, lining qualification date, and lining qualification due date as well as lining installation and inspection procedures. FRA and SMBC agreed to

schedule an in-person meeting in January 2023 to review SMBC's qualification records. On November 16, 2022, FRA followed up via email by sending a summary to SMBC of the November 15, 2022, discussion and requesting, for a second time, that SMBC provide the SMBC Tank Car List and Lining Installation and Inspection Procedures.

On November 28, 2022, in response to SMBC's request for an extension, FRA agreed to extend the due date for the delivery of the SMBC Tank Car List and Lining Installation and Inspection Procedures to January 6, 2023. After an additional discussion with SMBC, SMBC indicated that the SMBC Tank Car List and Lining Installation and Inspection Procedures would not be available before the week of January 9, 2023.

On December 21, 2022, FRA staff reiterated its request for the SMBC Tank Car List and Lining Installation and Inspection Procedures and also requested the qualification records and service reliability assessments in lieu of an in-person review that SMBC continually postponed. FRA agreed to push the deadline back again to January 31, 2023.

On January 30, 2023, SMBC delivered the listing of tank cars, several incomplete installation and inspection procedures, its acceptance criteria for rubber lining inspection and testing with a date of January 27, 2023,<sup>2</sup> a service reliability assessment for only 382 of 1112 cars that did not include analyses for each lining and commodity combination,<sup>3</sup> and inspection and test reports for only 2 out of 1112 rubber lined tank cars.<sup>4</sup> A review of the list revealed that 37 tank cars had qualification dates before the installation dates, an impossible situation as a rubber lining needs to be installed before it can be qualified.

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<sup>2</sup> See 49 CFR 180.509(i)(3).

<sup>3</sup> See 49 CFR 180.509(i)(2).

<sup>4</sup> See 49 CFR 180.501(d) and 49 CFR 180.517(b).

FRA reviewed the provided documents described above and found that 174 tank cars, including SHPX-205670, had lining qualification intervals of 10 years, in violation of 49 CFR 180.509(i)(2), which prohibits intervals exceeding eight (8) years. To operate with an extended interval and to be in compliance with the HMR, SMBC would need to have had an Alternative Inspection and Test Program (AIP) approved by the FRA Associate Administrator for Railroad Safety.<sup>5</sup> Photographs of SHPX-205565, collected as part of the HMII, revealed that it was marked with a 10-year interval (qualified in 2018 and due in 2028) while the SMBC-supplied tank car list indicated that the interval was seven years (qualified in 2018 and due in 2025). This discrepancy in qualification intervals supplied by SMBC raises questions about the validity of the data provided. Finally, the service reliability assessments provided to FRA did not include an analysis for each coating or lining and commodity combination.<sup>6</sup>

### *Subpoena*

FRA issued a subpoena to SMBC on February 3, 2023, to obtain the complete qualification records of their rubber lined tank car fleet as SMBC had heretofore not provided adequate records. On February 24, 2023, SMBC delivered qualification records for 1080 tank cars, 5 of which were not on the January 30 list. SMBC also failed to provide records for 37 tank cars from the January 30 list.

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<sup>5</sup> In a letter dated March 2, 2023, the Pipeline and Hazardous Materials Safety Administration (PHMSA) confirmed that SMBC needed to have an approved AIP if its qualification interval were to exceed eight years. *See* PHMSA Interp. Ltr 22-0134.

<sup>6</sup> *See* 49 CFR 180.509(i)(2).

### *Description of Non-Compliance*

The HMR require that tank car owners, such as SMBC, develop qualification programs that include written procedures for use by tank car facility employees.<sup>7</sup> An owner's qualification program must identify where to inspect, how to inspect, and the acceptance criteria.<sup>8</sup> Further, the HMR require tank car owners to inspect and test the cars' internal coatings and linings.<sup>9</sup> The HMR require tank cars to be inspected and tested in intervals not to exceed 8 years and tank car owners are required to maintain a written procedure for collecting and documenting the performance of the coating or lining applied within the tank car for its service life.<sup>10</sup> Each tank car that is inspected and tested as specified in 49 CFR 180.509 must have a written report, available upon request to FRA.<sup>11</sup>

FRA's review of 10% of SMBC's records illustrated numerous instances of noncompliance. At a high level, SMBC's records contained numerous instances of inconsistent inspection methodology and undocumented deviations from original equipment manufacturer (OEM) procedures,<sup>12</sup> inconsistent application of qualification intervals for the same commodity/lining combination,<sup>13</sup> failure to set qualification

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<sup>7</sup> 49 CFR 180.501(b).

<sup>8</sup> *Id.*

<sup>9</sup> 49 CFR 180.509(i)(2).

<sup>10</sup> *Id.*

<sup>11</sup> 49 CFR 180.517(b).

<sup>12</sup> For example, FRA found that inspection records for SHPX-201036 used a test voltage 10,000 volts above the maximum test voltage indicated on the OEM procedure, thereby increasing the probability of the voltage burning through thinner sections of the rubber and exposing the tank car shell to the lading. *See* 49 CFR 180.509(i)(1).

<sup>13</sup> Tank car SHPX-205541 was relined in 2018 with no accompanying inspection report of the failed lining and SHPX-205600 was relined in 2016 with no accompanying inspection report of the failed lining. *See* 49 CFR 180.509(i)(2).

intervals that ensure the railworthiness of the SMBC rubber lined fleet, and numerous records that do not meet the documentation requirements of 49 CFR 180.517(b).

FRA found that cars in the same commodity service with the same lining were given varying qualification intervals from 5 years to 10 years without any justification for the varying intervals. For example, in reviewing the SMBC-provided qualification records, tank car SHPX-205541 had 5-year qualification intervals while tank cars SHPX-205544 and SHPX-205565 had 10-year and 7-year qualification intervals, respectively. All three tank cars were lined with Blair VE524 rubber, were in phosphoric acid service, and were qualified between 2017 and 2018.

As a result of having longer qualification intervals, FRA found numerous examples of cars with defects that should have been detected through an inspection prior to failure. For instance, SHPX-205544 was marked with a 10-year interval and only made it 5 years before SMBC found the defects. Accordingly, SMBC should have reduced its qualification interval for cars in that service as required by 49 CFR 180.509(i).

For qualification records that do not meet the HMR's documentation requirements, FRA found various cars, including SHPX-205544, SHPX-205549, SHPX-205600, SHPX-207000, to be lacking required elements of 49 CFR 180.517(b).<sup>14</sup> For various cars, SMBC could not produce the results of each inspection and test performed; tank car specification; location and description of defects found and method used to

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<sup>14</sup> See 49 CFR 180.517(b).

repair each defect; the name and address of the tank car facility and the name and signature of inspector; and the unique code (station stencil) identifying the facility.<sup>15</sup>

Further, SMBC was not able to produce evidence that it had provided any acceptance criteria to tank car facilities prior to January 27, 2023. Without acceptance criteria, SMBC's tank car inspections do not meet the requirements of 49 CFR part 180 subpart F. Without test procedures and acceptance criteria, any inspection and test reports completed prior to January 27, 2023, are invalid and any qualifications that took place prior to that date did not accomplish a careful and critical examination that verifies conformance using inspections and tests based on a written program approved by the tank car owner. As SMBC did not produce evidence of acceptance criteria prior to January 27, 2023, none of the tank cars in its fleet are qualified.

*Rationale for the Issuance of a Railworthiness Directive to SMBC*

For the reasons described above, FRA's review of SMBC's qualification records reveals a program significantly out of compliance with the HMR's qualification and maintenance requirements. As explained above, FRA discovered numerous issues with SMBC's inspection and qualification procedures and SMBC could not demonstrate that it had acceptance criteria as 49 CFR 180.509(i)(3) requires for those procedures prior to January 27, 2023. Additionally, FRA found numerous cars with qualification intervals exceeding the maximums laid out in 49 CFR 180.509(i) without an approved AIP, several instances where a car's qualification stencil did not match SMBC's qualification record for that car, and multiple impossible occurrences of a lining being qualified prior to installation. Given the severity of these non-accident releases combined with SMBC's

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<sup>15</sup> *Id.*



lack of cooperation in producing records for FRA review, FRA finds issuance of this RWD is necessary to prevent additional failures that could result in death, serious injury, and the release of additional hazardous materials into the environment.

While FRA could issue a notice of probable violation, this action would not have the immediate impact that FRA believes is necessary given the extent of SMBC's non-compliance. As described above, in the last 15 months, SMBC has had three serious incidents that released phosphoric acid into the environment. For each incident that occurred, FRA asked SMBC to determine the root cause of each failure and inform FRA of the corrective and preventive actions taken to prevent recurrence. SMBC has not made any attempts to determine what caused these failures and, as of the date of this Directive, SMBC has not moved any of the three cars involved in these serious incidents to repair shops or taken any other action as required under 49 CFR 180.509. Based on the information above, SMBC's rubber lined tank car fleet is not in compliance with the HMR and may be operating in an unsafe operating condition.

## **II. RAILWORTHINESS DIRECTIVE**

Based on the above discussion and acting under the authority granted in 49 CFR 180.509(b)(4), FRA finds that SMBC-owned DOT-111 general purpose tank cars, equipped with SMBC-owned rubber linings, are in a non-compliant state and are in an unknown safety condition that could result in the release of hazardous materials in transportation. Further, despite FRA's numerous requests, SMBC has failed to provide FRA with adequate maintenance and qualification records to demonstrate the tank cars were being maintained and qualified in accordance with the HMR.

Upon the date of issuance of this Directive, SMBC must:

1. Within 10 business days from the issuance of this Directive:
  - a. Notify all offerors of SMBC-owned tank cars equipped with SMBC-owned rubber linings that the fleet is in a state of non-conformance and provide objective evidence of this notification to FRA.
  - b. Provide FRA with a listing of SMBC-owned tank cars equipped with rubber linings **not** owned by SMBC. This listing must include: the lining owner's identity, primary point of contact, and contact information. (Cars equipped with linings not owned by SMBC are not subject to this Directive).

2. Within 15 business days from the issuance of this Directive:

Provide FRA with (i) a qualification and maintenance program in compliance with 49 CFR 180 subpart F; (ii) approved inspection and test procedures including acceptance criteria for each rubber lining and commodity combination; and (iii) document qualification intervals for each lining and commodity combination, including any considerations for lining condition and service life, and the analyses and data used to support each qualification interval.

3. Within 20 business days from the issuance of this Directive:

Provide FRA with a detailed schedule for the inspection, testing, and qualification of the tank cars subject to this Directive in accordance with the qualification and maintenance program developed under (2) above. The schedule must prioritize the testing and qualification of the cars based on all relevant risk factors, including the length of time an existing lining

has been in service, and ensure all cars subject to this Directive are appropriately inspected, tested, and qualified within 18 months of the issuance of this Directive.

4. Qualify all non-compliant SMBC-owned tank cars equipped with SMBC-owned rubber linings in accordance with the schedule developed under paragraph (4) of this Directive.
  - a. *Tank Car Facilities.* All inspections and tests required by this Directive must be performed by tank car facilities, as defined in 49 CFR 179.2, that have approved quality assurance programs in accordance with 49 CFR 179.7.
  - b. *Procedures.* Rubber linings that require qualification must be performed in accordance with SMBC's qualification and maintenance program referenced in item 3. All qualifications must be performed in accordance with the written procedures provided in item 4 that includes details regarding what to inspect, where to inspect, and how to inspect and acceptance criteria in accordance with 49 CFR 180.501(b) and 180.509(i)(2).
  - c. *Records.* All qualifications must follow the reporting and record retention requirements in 49 CFR 180.517.
  - d. *Reports.* SMBC must submit quarterly reports until FRA has determined that the non-compliant tank cars are remediated. Those reports must be in an electronic format and must be submitted to

Randy Keltz, Office of Railroad Safety, email: [Randy.Keltz@dot.gov](mailto:Randy.Keltz@dot.gov).

The report must include the following information:

- i. Tank car reporting mark(s) and number(s);
  - ii. Tank car facility (facility name and station stencil) performing the qualification and inspection(s) and test(s);
  - iii. Lining Qualification Date marked on each tank car;
  - iv. Lining Qualification Due Date marked on each tank car;
  - v. Lining Qualification Station Stencil marked on each tank car;
  - vi. Inspector name(s) that performed the inspection(s) and test(s) and level of certification and training for each tank car;
  - vii. Results of inspection and test for each tank car; and
  - viii. Corrective (repair) action(s) taken.
5. Report instances of lining or tank failure, or releases from any of the tank cars subject to this Directive to Randy Keltz, FRA within five days of being notified of such occurrence.
6. Report any sales of any cars subject to this Directive to Randy Keltz, FRA within five days of sale.

If SMBC fails to comply with any requirement of this Directive, including the timelines identified above and the schedule developed in accordance with paragraph (4) above, the cars subject to this Directive not tested and qualified in accordance with this Directive, must be immediately removed from service and such cars cannot continue in service until they have been qualified in accordance with the qualification and maintenance program developed under this Directive.

FRA will continue to monitor the performance of the tank cars subject to this Directive and will take all necessary regulatory or enforcement action to ensure the highest level of safety on the nation's railroads is maintained. Regardless of any entity's compliance with this Directive, FRA reserves the right to seek civil penalties or to take any other appropriate enforcement action for violations of the HMR that have occurred.

### **III. AGENCY CONTACT FOR QUESTIONS**

If you have any questions concerning this Directive, contact Randy Keltz, Manager of Tank Car Safety Programs, Office of Railroad Safety, telephone: (202) 236-7460, email: [Randy.Keltz@dot.gov](mailto:Randy.Keltz@dot.gov).

DATED:

**John Karl Alexy,**  
*Associate Administrator for Railroad Safety*  
*Chief Safety Officer.*